

REMARKS

Claims 1, 4-9, 11-18, and 20-25 are currently pending. In an Office Action dated December 14, 2007, the Examiner rejected claims 1, 4-9, 11-12, 16-18, 20, 23, and 25 under 35 U.S.C. §102(e) as being unpatentable over Armitage et al. (U.S. patent no. 6,374,303, hereinafter referred to as “Armitage”). The Examiner rejected claims 8, 13-15, 21-22, and 24 under 35 U.S.C. §103(a) as being unpatentable over Armitage in view of Chuah et al. (U.S. patent no. 6,735,190). The rejections are traversed and reconsideration is hereby respectfully requested.

The Examiner rejected claims 1, 4-9, 11-12, 16-18, 20, 23, and 25 under 35 U.S.C. §102(e) as being unpatentable over Armitage. Specifically, with respect to claims 1, 18, and 23 the Examiner contended that Armitage teaches a method for multiplexing data packets that includes receiving multiple data packets, wherein each received data packet comprises a routing address that is associated with one or more of network layer routing information and transport layer routing information (col. 2, lines 21-62, determining an address label for each received data packet based on the data packet’s routing address, wherein the address label provides one or more of network layer and transport layer routing information (col. 3, lines 7-37), deleting the data packet’s routing address from the data packet and adding the address label determined for the data packet to the data packet to produce a modified data packet and multiplexing the modified data packets (col. 3, line 40, to col. 4, line 20), and wrapping the multiplexed data packets with a new data transmission header comprising link layer routing information for the multiplexed data packets to produce a data transmission unit (col. 2, lines 21-33, col. 5, lines 5-47, and col. 4, lines 40-45). The applicants respectfully disagree.

Armitage teaches a method and messaging for a distribution of Multi-Protocol address Label Switching (MPLS) labels. That is, as noted in the pending application, in order to improve data network capacity, particularly when low-speed links, such as T1/E1 lines, are involved, it was proposed to multiplex packets, such as IP/cUDP/PPP packets or IP/UDP/RTP packets, into a Frame Relay frame and wrap the multiplexed packets with an MPLS header. The multiple packets and new header, combined into a single frame, are transmitted to a destination node identified by the new header. One of

ordinary skill in the art realizes, however, that in order to use an MPLS header, the network nodes must understand the routing information included the header. As a result, Armitage teaches a method of assuring that a switching node receiving a frame comprising an MPLS header supports MPLS and further teaches messaging (Label Distribution Protocol (LDP)) that is used to distribute the MPLS routing information, such as the LDP label bindings of column 3, line 7, to column 4, line 20 of Armitage cited by the Examiner, to the MPLS-capable nodes.

With respect to an architecture of an IP/UDP protocol stack, the MPLS layer that applies the MPLS header was a new layer interposed between Layer 3, that is the internet layer or network layer, and Layer 2, that is, a sub-layer of the network interface layer or the link layer. The transport layer is the next layer up from the network layer. The network interface, or link, layer includes two sub-layers, known as Layer 1 and Layer 2. The MPLS layer is a third sub-layer of the network interface/link layer and includes a tag of 24 bits sitting between a Layer 2 header and upper layer headers, such as the network layer and transport layer headers, and is only link layer significant. MPLS was proposed by the Internet Engineering Task Force (IETF) for the purpose of switching data packets with some differentiating features by providing link layer routing for multiplexed data packets with a same IP header. As a result, the MPLS header, including the LDP bindings of column 3, line 7, to column 4, line 20 of Armitage cited by the Examiner, provides link layer routing for packets received from the network layer and not transport layer routing and does not provide multiplexing functions when used with a point-to-point protocol (PPP). LDP labels are inserted at the very beginning of a packet and are used by hardware to switch, or route, packets among link layer paths. As acknowledged by the Examiner in a previous office action, Armitage does not teach determining an address label for the data packet based on the data packet's routing address, wherein the address label provides one or more of network layer and transport layer routing information.

Furthermore, nowhere does Armitage teach deleting network layer or transport layer routing addresses from the data packets. The section of Armitage cited in this regard, that is, column 3, line 40, to column 4, line 20, merely teaches messaging exchanged by routers to distribute, and to inform of release of, LDP label bindings.

Nothing here teaches any swapping of an LDP label binding for other routing information in a data packet, let alone a swapping of an address label that provides one or more of network layer routing information and transport layer routing information for a routing address that is associated with one or more of network layer and transport layer routing information, that is, deleting the routing address and adding the address label.

Unlike an MPLS header, the address label of claim 1 provides one or more of network layer and transport layer routing information. Claim 1 then provides that data packets to which the claimed address labels have been added may then be multiplexed and wrapped with a header comprising link layer routing information, for example, an MPLS header. The address labels taught by claim 1 substitute for transport and network layer routing addresses, such as the IP and UDP headers, and are independent of the transport layer and network layer protocols. Thus, packets utilizing different transport layer and network layer protocols may be multiplexed over a PPP connection when using the address labels taught by claim 1. This cannot be achieved with a use of an MPLS header and, accordingly, is not taught by Armitage. In other words, in the prior art, the transport layer and network layer protocols applied to multiplexed packets must be the same, even when wrapping the packets with an MPLS header, for the multiplexed packets to be transported over a PPP connection. The use of the address labels taught by claim 1 overcomes this constraint.

Therefore, the applicants respectfully submit that Armitage does not teach the features of claims 1 and 18 of receiving multiple data packets, wherein each received data packet comprises a routing address that is associated with one or more of network layer routing information and transport layer routing information, determining an address label for each received data packet based on the data packet's routing address, wherein the address label provides one or more of network layer and transport layer routing information, and deleting the data packet's routing address from the data packet and adding the address label determined for the data packet to the data packet to produce a modified data packet. Nor does Armitage teach the features of claim 23 of a data receiving device comprising a processor that extracts multiple data packets from a data transmission unit, determines one or more of a network layer and a transport layer routing address for each data packet of the multiple data packets based on an address

label of the data packet that provides one or more of network layer and transport layer routing information, deletes the address label from and adds the determined one or more of a network layer and a transport layer routing address to each data packet of the multiple data packets, and routes each data packet based on the data packet's determined routing address. Accordingly, the applicants respectfully request that claims 1, 18, and 23 may now be passed to allowance.

Since claims 4-8 depend upon allowable claim 1, claims 20-22 depend upon allowable claim 18, and claims 24 and 25 depend upon allowable claim 23, the applicants respectfully request that claims 4-8, 20-22, and 24-25 may now be passed to allowance.

Claim 9 provides a method for point-to-point transmission of data including receiving, by a data transmitting device, multiple data packets, wherein each received data packet comprises a routing address that is associated with one or more of network layer routing information and transport layer routing information, determining, by the data transmitting device, an address label for each received data packet based on the data packet's routing address, wherein the address label provides one or more of network layer and transport layer routing information, and for each data packet of the multiple received data packets, deleting, by the data transmitting device, the data packet's routing address from the data packet and adding, by the data transmitting device, the address label determined for the data packet to the data packet to produce a modified data packet. As described in detail above, these features are not taught by Armitage. Accordingly, the applicants respectfully request that claim 9 may now be passed to allowance.

Since claims 11-17 depend upon allowable claim 9 the applicants respectfully request that claims 11-17 may now be passed to allowance.

As the applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the

Examiner is invited to contact the undersigned representative to expedite resolution of the matter. Furthermore, please charge any additional fees (including any Request for Continuing Examination and extension of time fees), if any are due, or credit overpayment to Deposit Account No. 50-2117.

Respectfully submitted,
Dah-Lain Almon Tang et al.

By: /Steven May/

Steven A. May
Attorney for Applicants
Registration No. 44,912
Phone No.: 847/576-3635
Fax No.: 847/576-3750